

Figure 1: Web service interface for a service named “GetStockQuote”

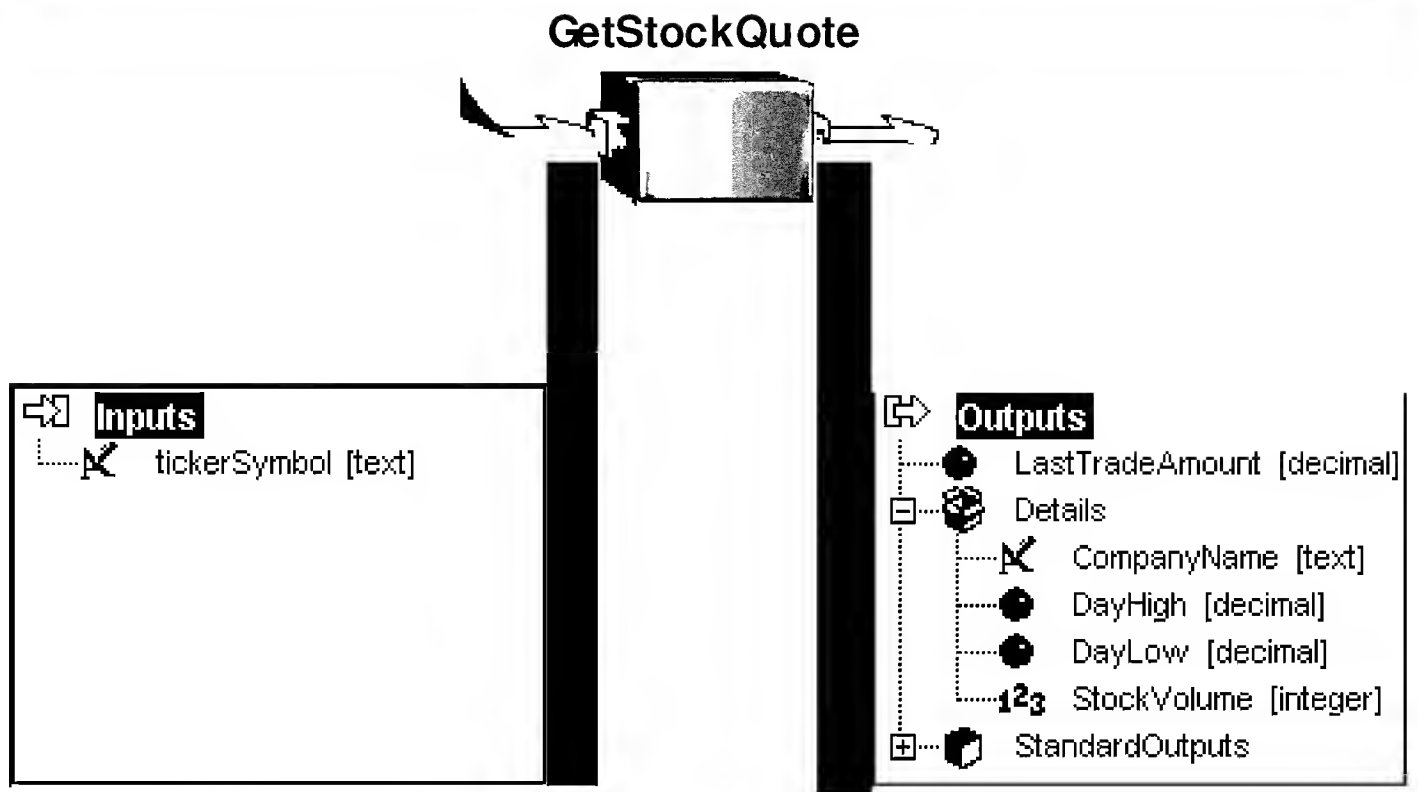


Figure 2: Composite model implementation

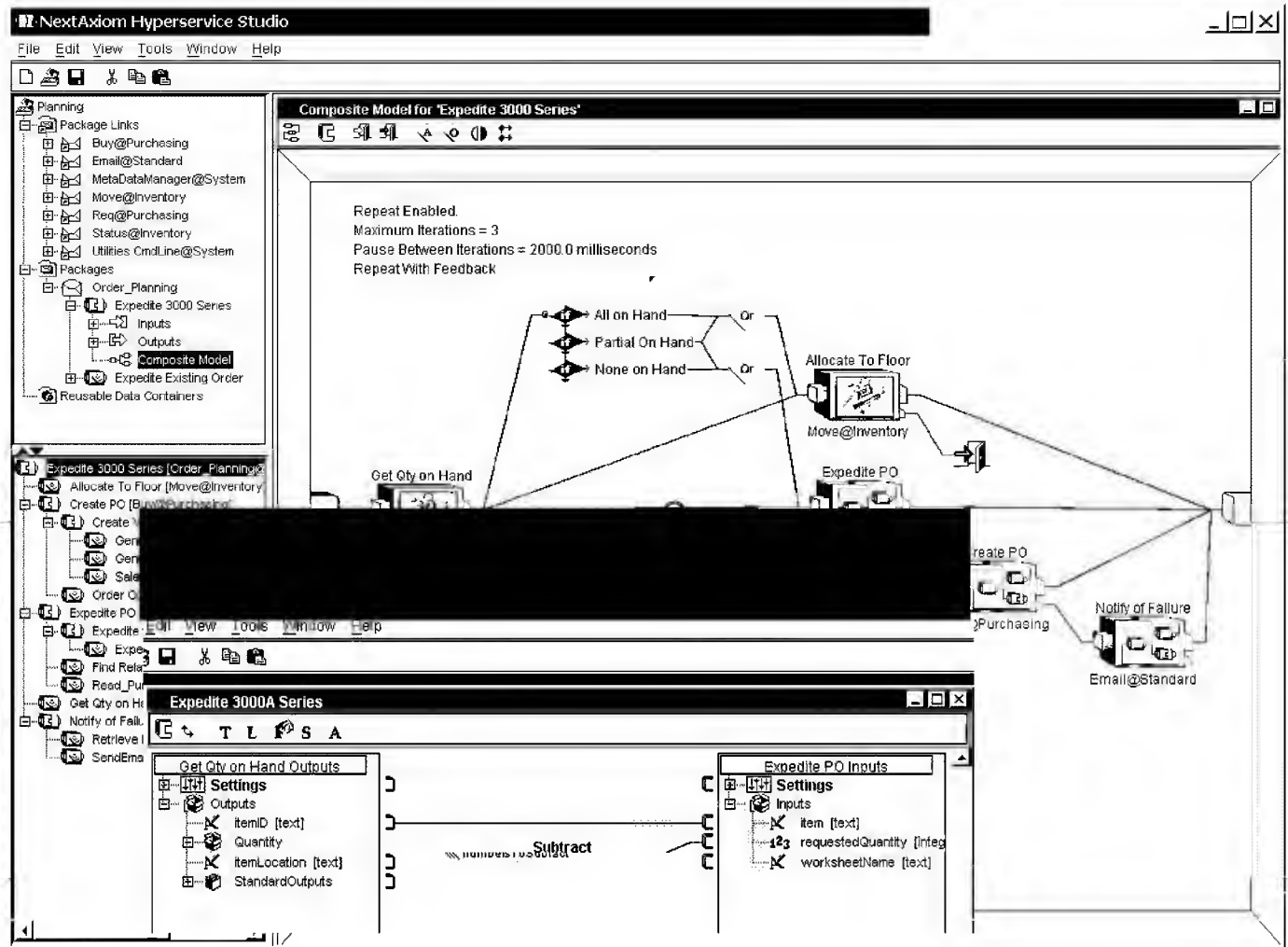


Figure 3: Composite Service

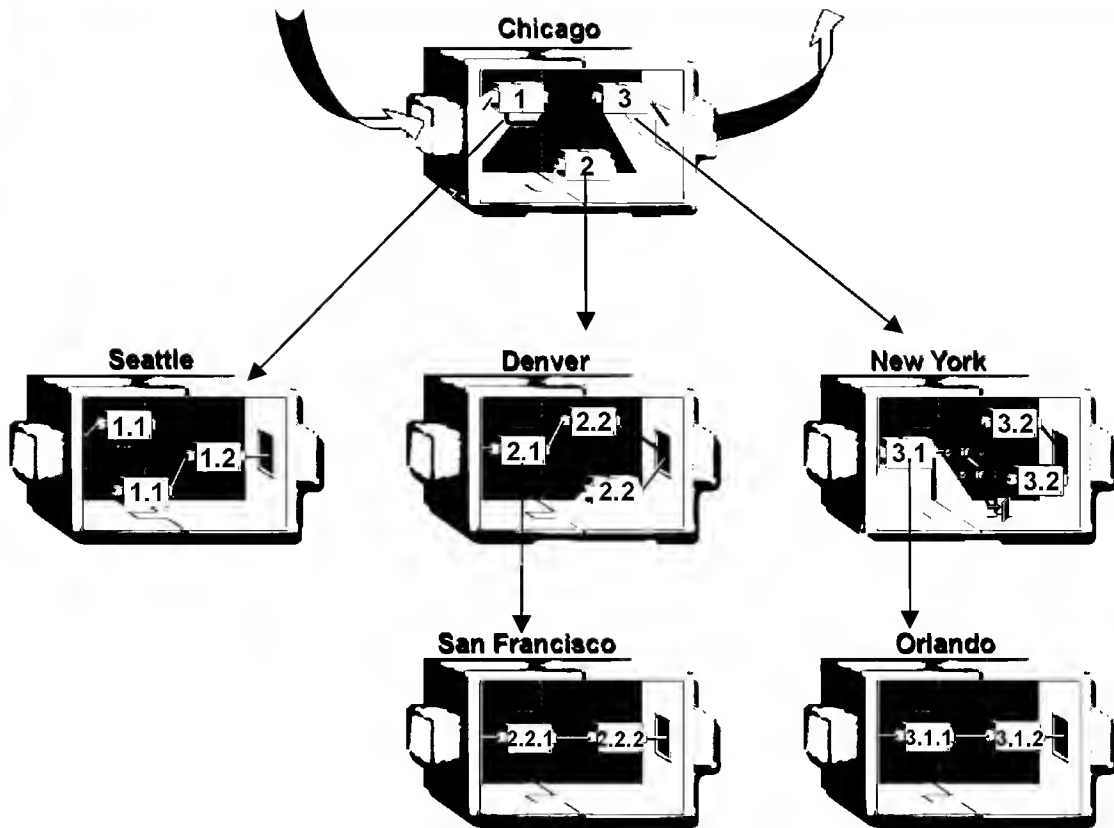
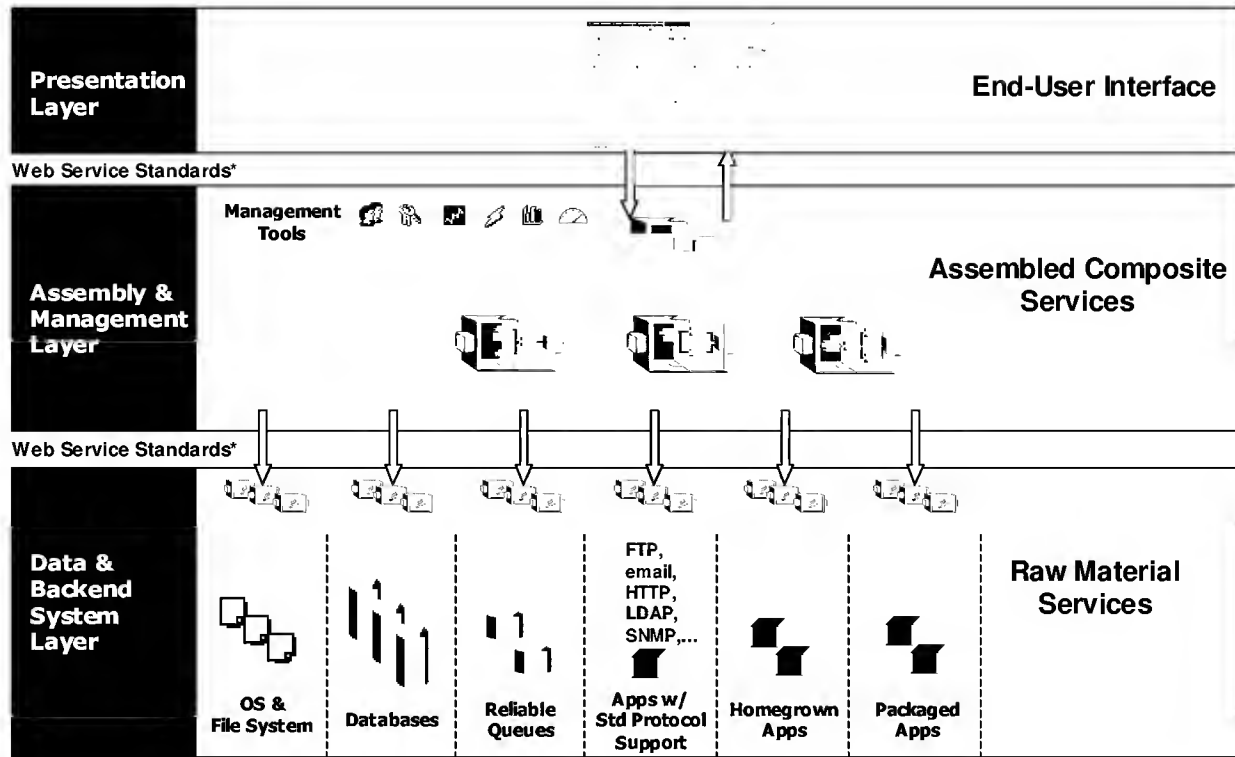


Figure 4: Service-Oriented Application Architecture



*or similar Interface, consumption, and discovery protocols

Figure 5a: Log Analyzer – Graphical User Interface (GUI) calls composite services

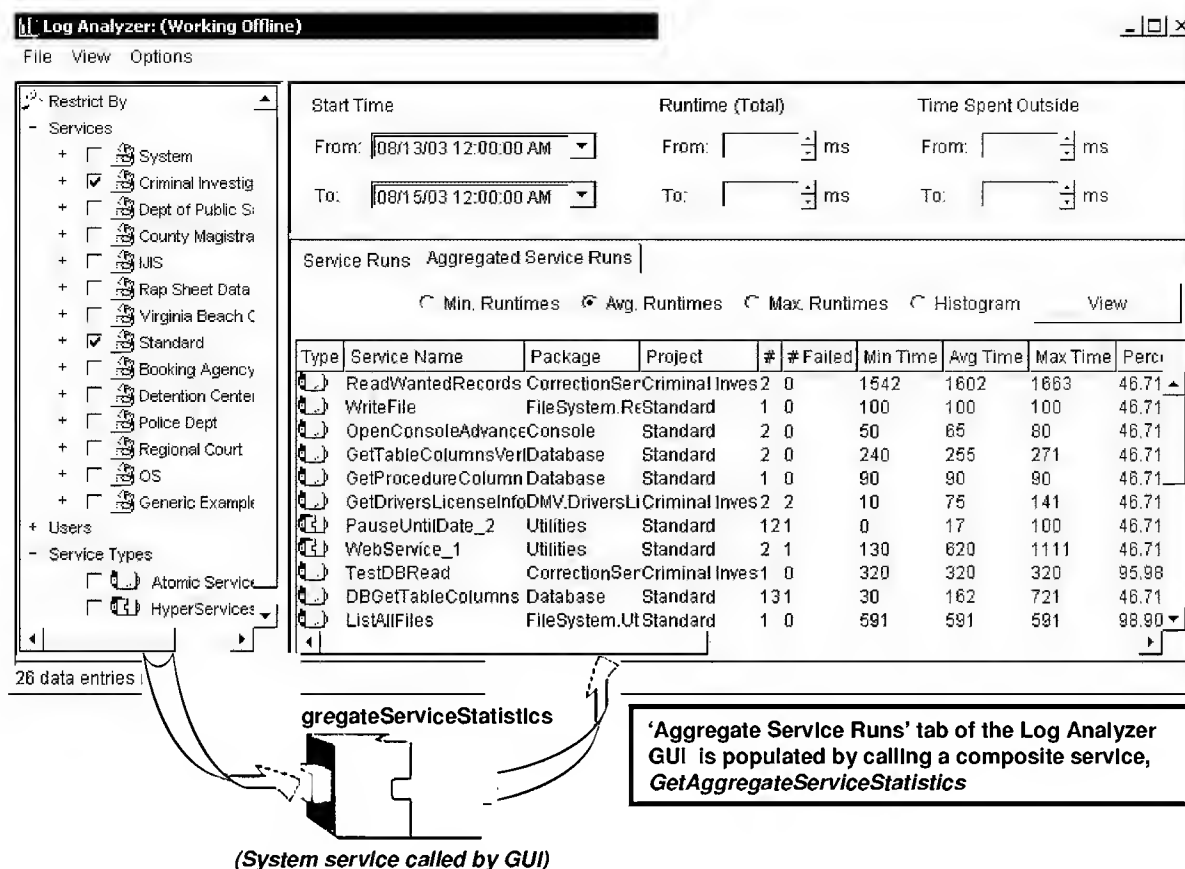


Figure 5b: Log Analyzer – GetAggregateServiceStatistics, an example composite service called by the GUI

GetAggregateServiceStatistics is a composite service that consumes other services:
CalculateServiceStatistics, *CalcStdDeviation*, & *CalculatePercentile*

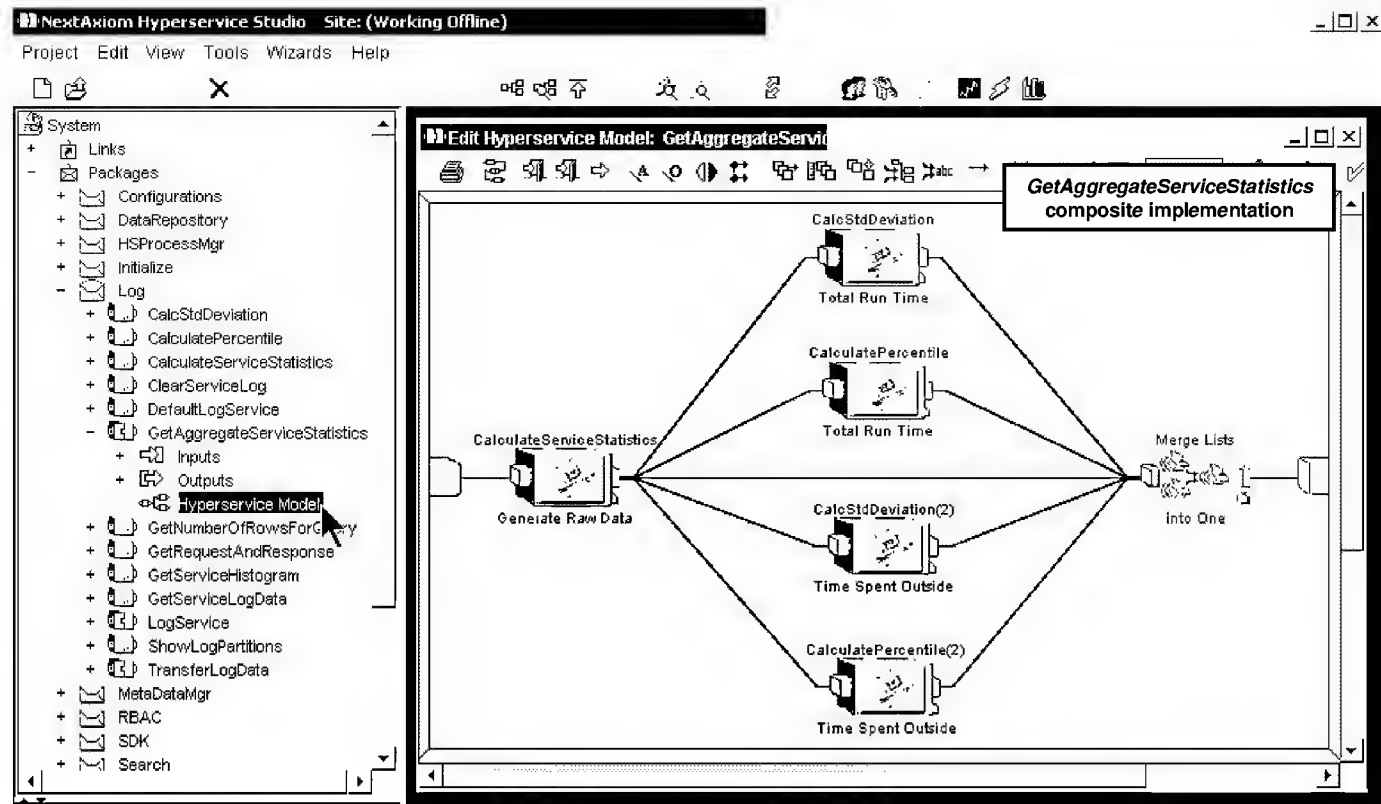


Figure 6: Services used for Metadata Management

The screenshot displays the NextAxiom Hyperservice Studio interface. On the left, the **Project Pane** shows a tree structure under **System** with folders like **Links**, **Packages**, **Configurations**, **DataRepository**, **HSProcessMgr**, **Initialize**, **Log**, and **MetaDataMgr**. The **MetaDataMgr** folder is expanded, showing sub-items like **Account** and **Package**, each with a list of services (e.g., **AccountPackageExists**, **DeleteAccount**, **GetAccount**, etc.).

The main workspace shows a service diagram with two service boxes. The top box is labeled **GetAccount** and has an annotation: "The *GetAccount* service is called when an account (or 'project') is opened. This service fetches account metadata, such as the packages (📁) that are displayed in the project pane." Below it, the **GetPackage** service is shown in an **Edit: GetPackage** window. This window has a **Data Container** tab with **General** and **Advanced** sub-tabs. The **General** sub-tab shows **Name: Outputs**. The **Advanced** sub-tab shows a list of **Outputs** including **data**, **accessCode**, **lastModified**, **PackageInfo**, **name**, **accessCode**, **PackageLinkInfo**, and **RDCInfo**. An annotation for the **GetPackage** service states: "The *GetPackage* service is called when a package in the project tree is opened. This service fetches the data required to display the content of the packages in the project pane."

Figure 7a: 'Search for Web Services' GUI – calls System services

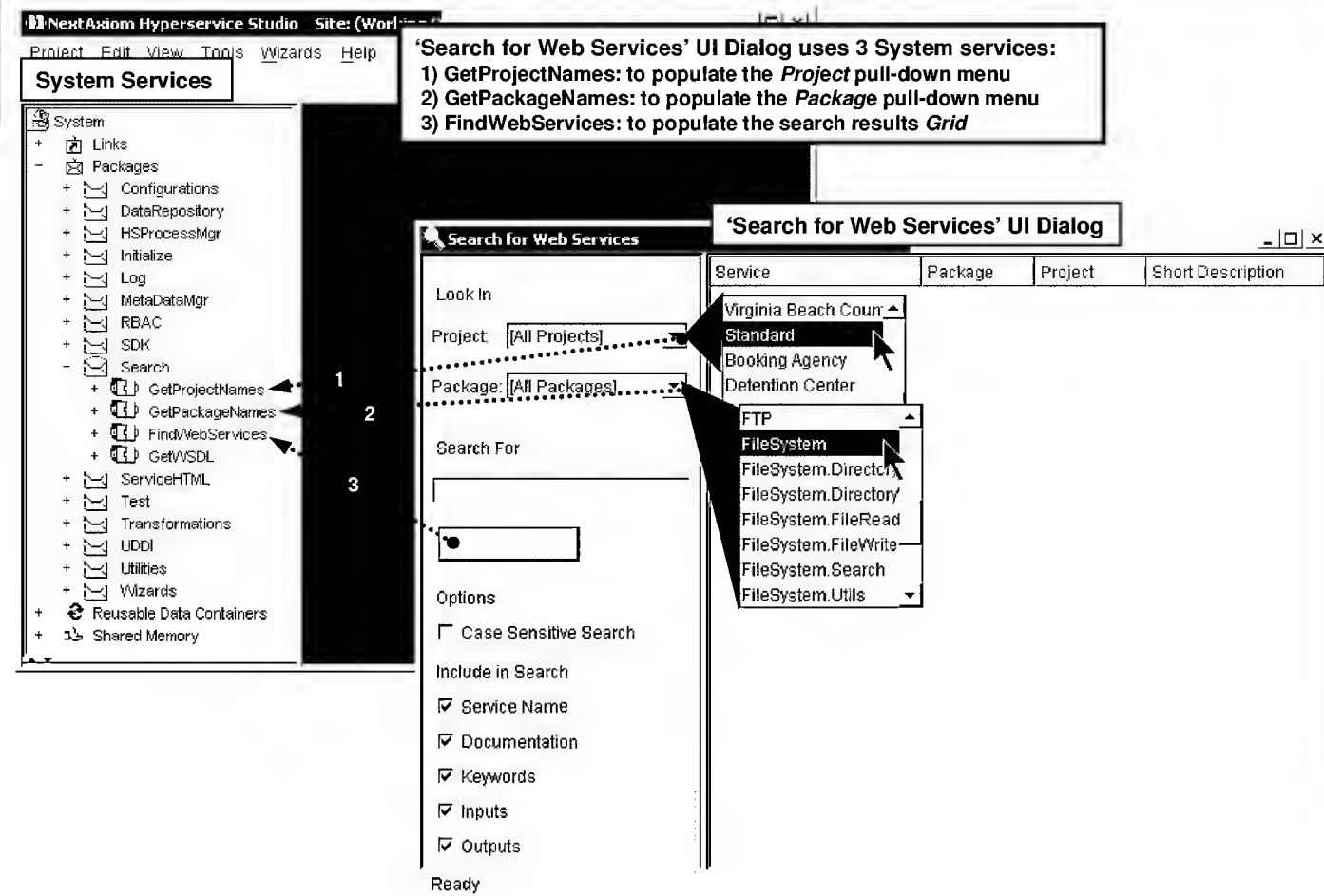


Figure 7b: 'Search for Web Services' GUI – using 'FindWebServices' composite service

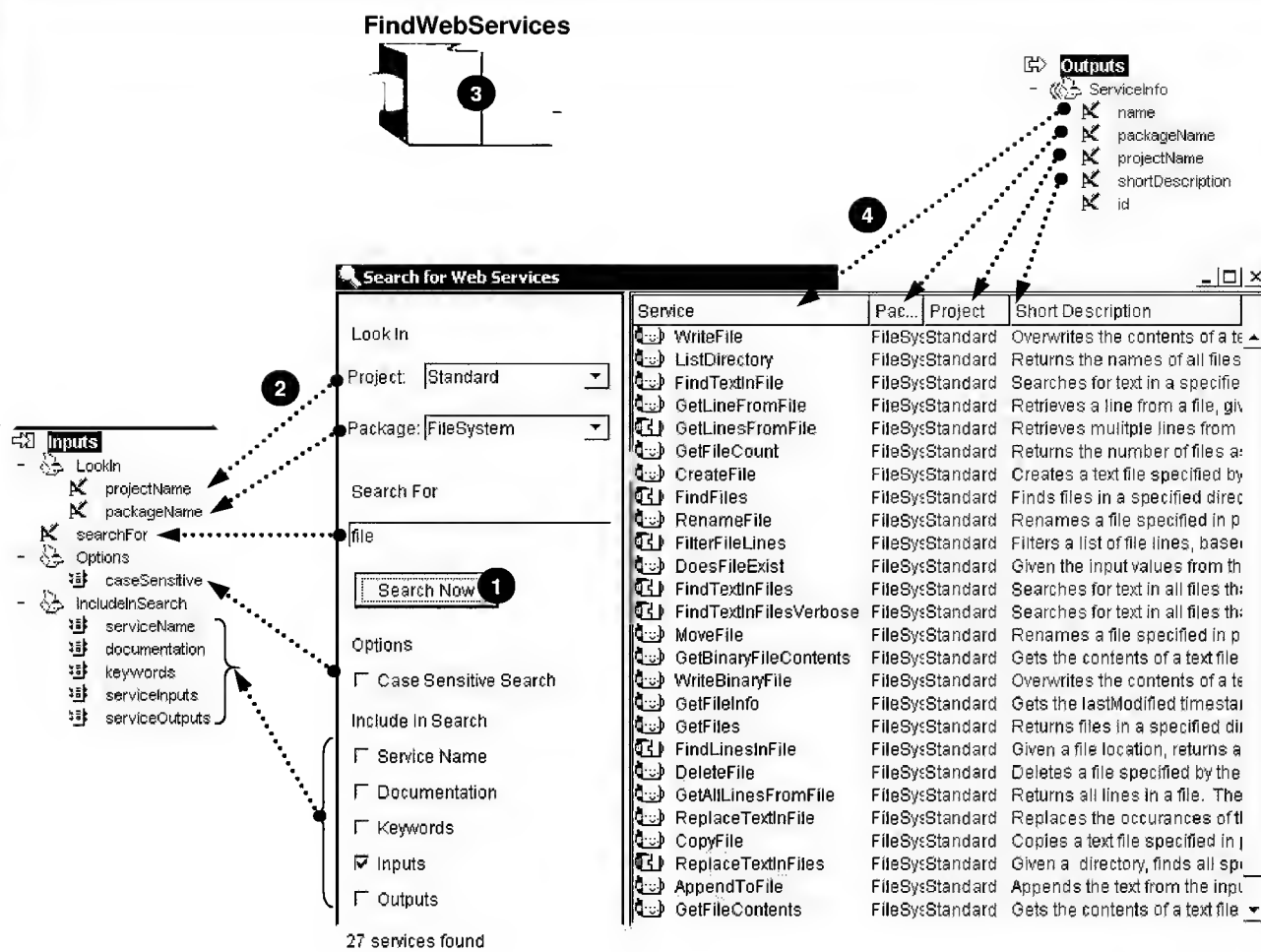


Figure 8: Logging Service Execution – Kernel calls a customizable composite service

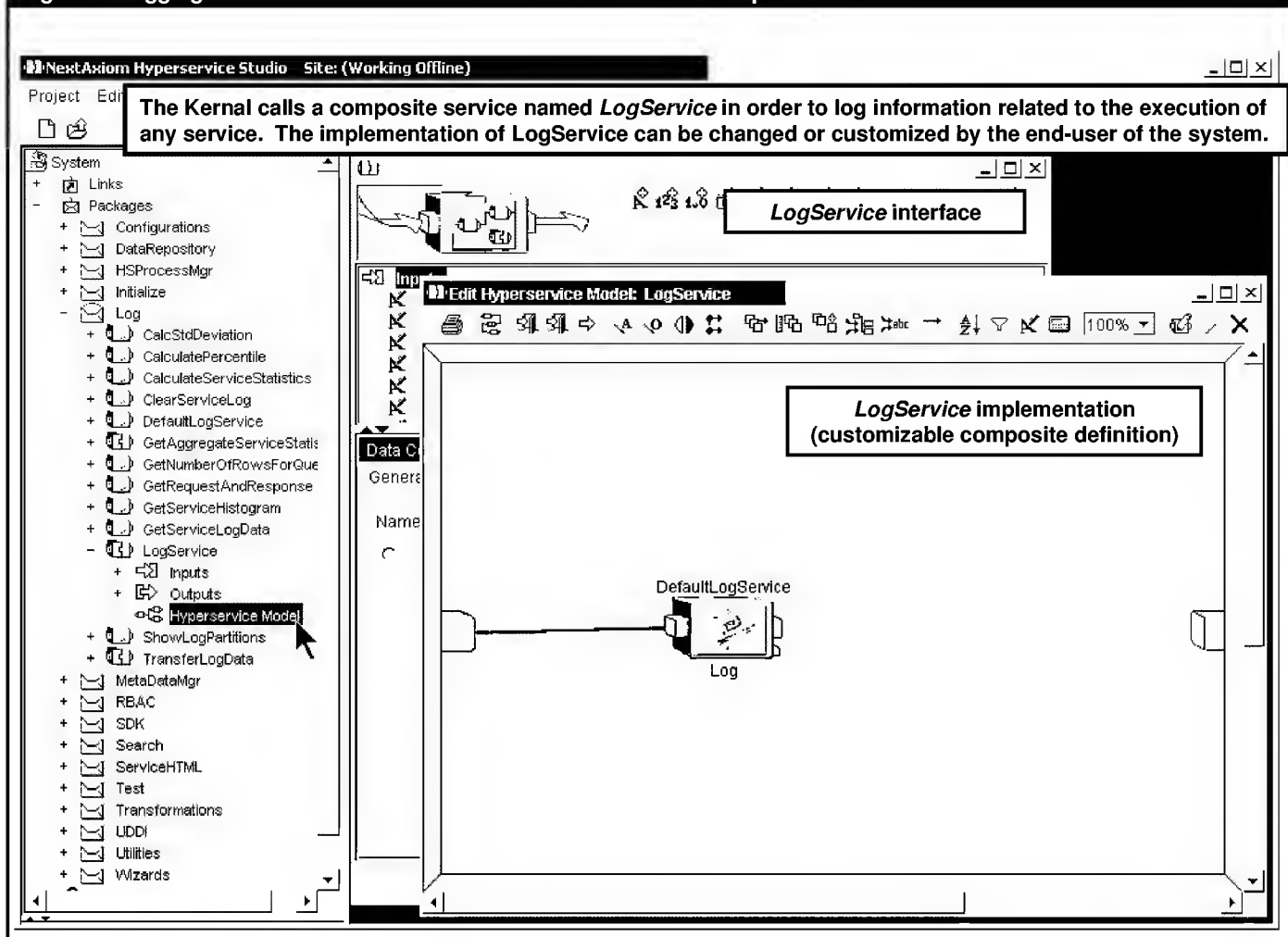


Figure 9a: Services provided for Service Process Monitoring & Management

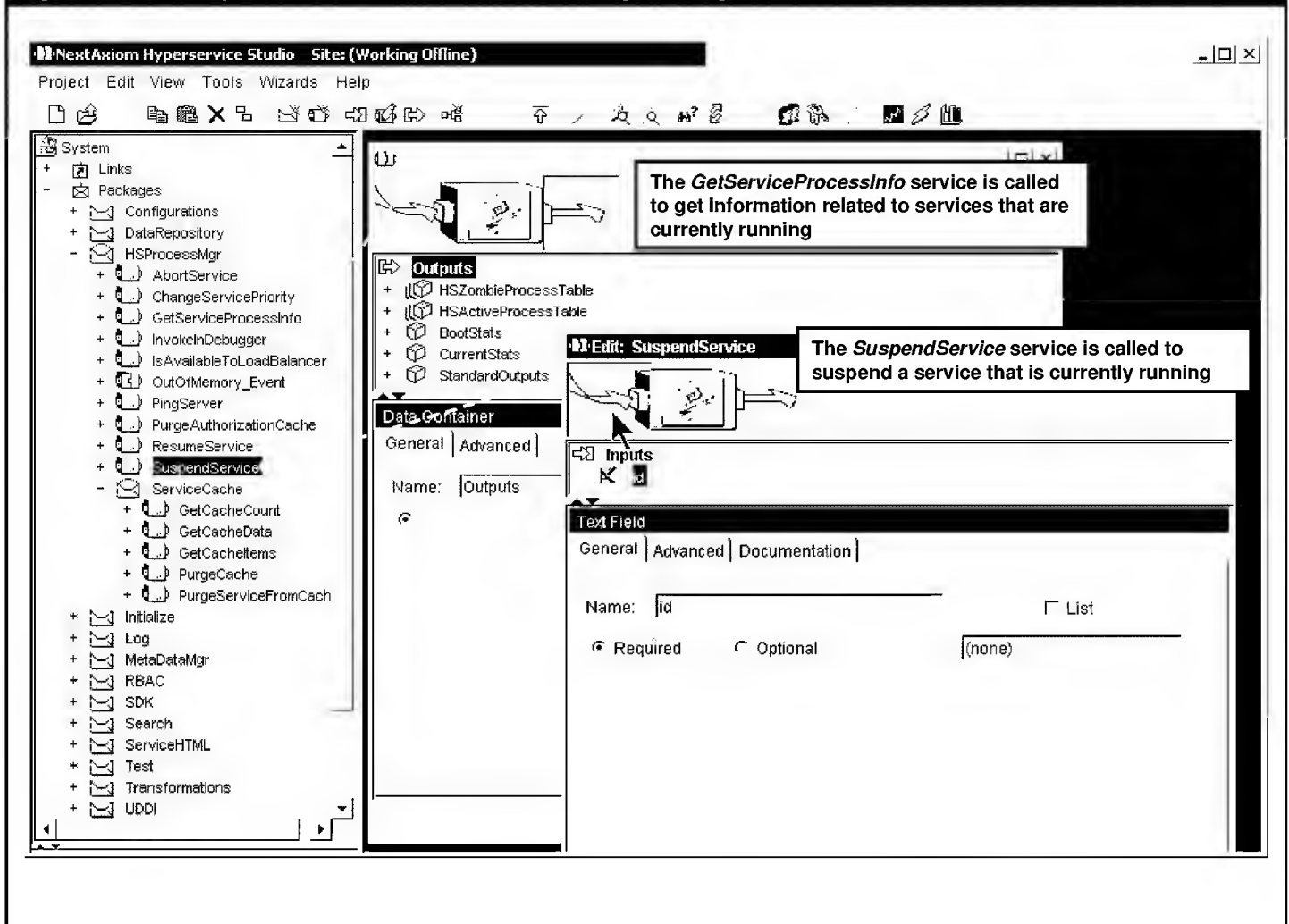


Figure 9b: 'Web Service Task Manager' GUI – calls Process Monitoring & Management services

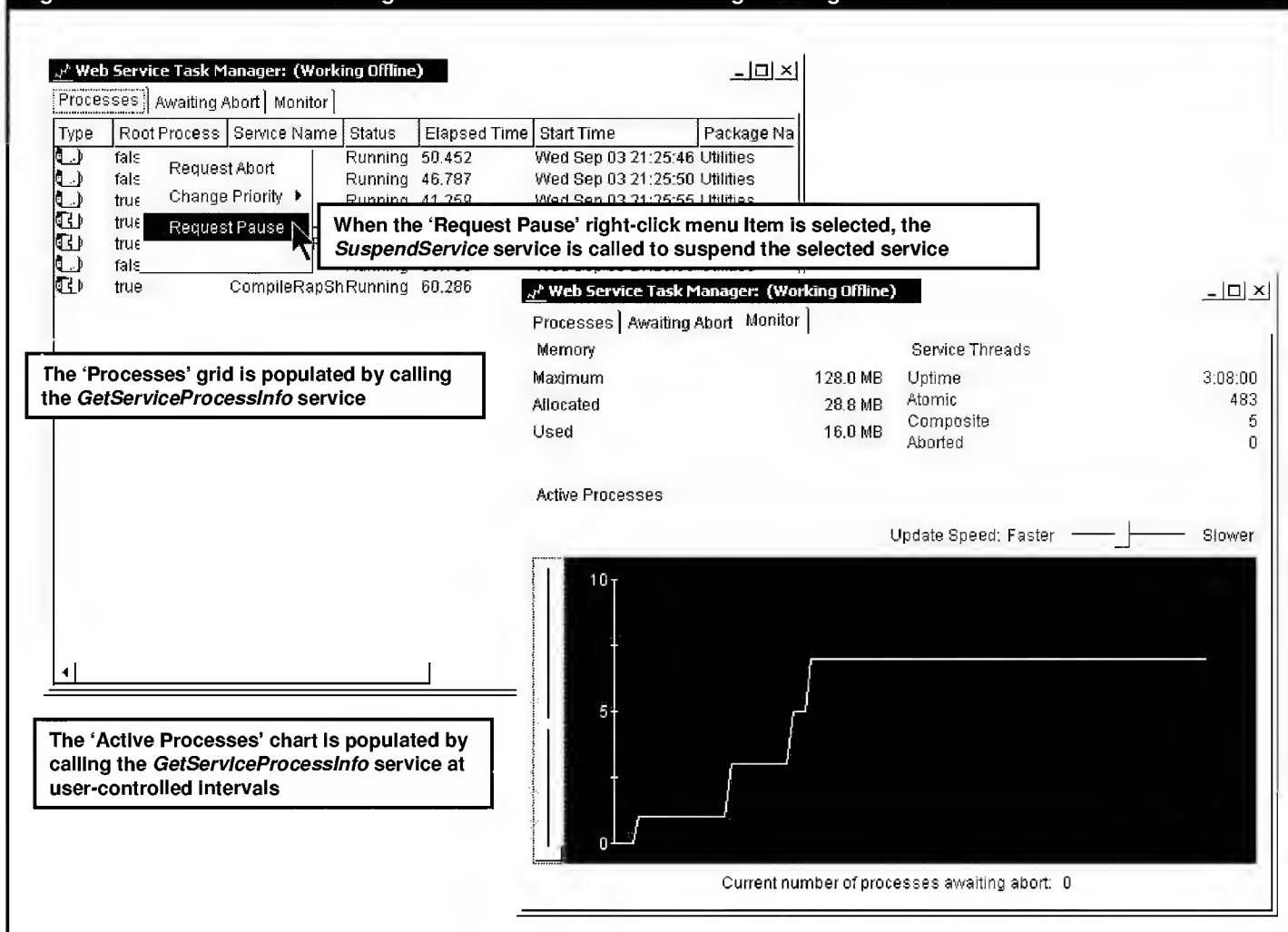


Figure 10a: Services provided for Service Cache Management

NextAxiom Hyperservice Studio Site: (Working Offline)

Project Edit View Tools Wizards Help

System

- Links
- Packages
 - Configurations
 - DataRepository
 - HSProcessMgr
 - AbortService
 - ChangeServicePriority
 - GetServiceProcessInfo
 - InvokeInDebugger
 - IsAvailableToLoadBalancer
 - OutOfMemory_Event
 - PingServer
 - PurgeAuthorizationCache
 - ResumeService
 - SuspendService
 - ServiceCache
 - GetCacheCount
 - GetCacheData
 - GetCacheItems
 - PurgeCache
 - PurgeServiceFromCache**
- Initialize
- Log
- MetaDataMgr
- RBAC
- SDK
- Search
- ServiceHTML
- Test
- Transformations
- UDDI

Outputs

- Items
 - entryTime
 - lastTimeUsed
 - accountName
 - packageName
 - contractName
 - contractId
 - parentId
 - cacheKeyPrefix**
 - cacheKey
 - dataSizeInChars
 - isSwappedToDisk

Text Field

General | Advanced | Documenta

Name:

☒ Required ☐ Optional

Value Restrictions

☒ Apply No Restrictions

☐ Restrict By Value

☐ Restrict By Range

Edit: PurgeServiceFromCache

The *PurgeServiceFromCache* service is called to purge cache data for a given service

Inputs

- ☒ **cacheKeyPrefix**

Text Field

General | Advanced | Documentation

Name:

☒ Required ☐ Optional

Figure 10b: 'Web Service Cache Manager' GUI – calls Cache Management services

Web Service Cache Manager: (Working Offline)

Monitor | Cache-Enabled Services | **Cache Items** | Options

Restrict by Service: Project: [All Projects] Other Restrictions: ☒ In Memory ☒ On Disk Refresh

Package: [All Packages]

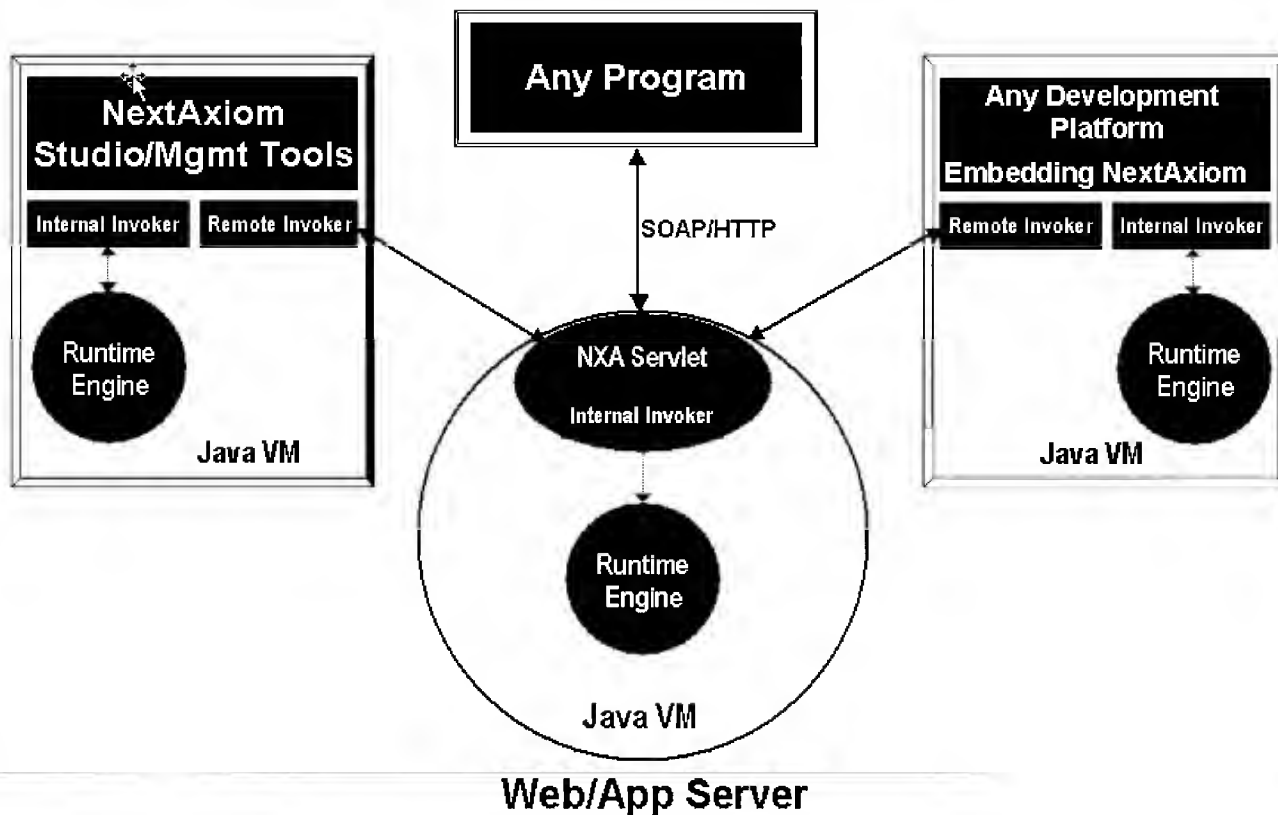
The 'Cache Items' grid is populated by calling the *GetCacheItems* service

Service	Package	Project	Entry Time	Last Used	On Disk
GetZipCode	Shipping	AvailableToPromise	05:45:54 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
GetProductFamily	Inventory	Av...	05:43:29 PM PDT, 09/04/03	05:43:29 PM PDT, 09/04/03	No
GetZipCode	Shipping	Av...	05:46:01 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
GetProductDescription	Inventory	Av...	05:42:51 PM PDT, 09/04/03	05:42:51 PM PDT, 09/04/03	No
GetProductDescription	Inventory	Av...	05:46:30 PM PDT, 09/04/03	05:46:30 PM PDT, 09/04/03	No
GetZipCode	Shipping	Av...	05:46:01 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
GetColor	Console...	Sta...	05:51:26 PM PDT, 09/04/03	05:51:26 PM PDT, 09/04/03	No
GetProductDescription	Inventory	Av...	05:46:30 PM PDT, 09/04/03	05:46:30 PM PDT, 09/04/03	No
GetColor	Console...	Sta...	05:51:26 PM PDT, 09/04/03	05:51:26 PM PDT, 09/04/03	No
GetProductFamily	Inventory	Av...	05:46:30 PM PDT, 09/04/03	05:46:30 PM PDT, 09/04/03	No
GetProductFamily	Inventory	AvailableToPromise	05:39:55 PM PDT, 09/04/03	05:39:55 PM PDT, 09/04/03	No
ValidateCurrency	Currency	AvailableToPromise	05:57:13 PM PDT, 09/04/03	05:57:13 PM PDT, 09/04/03	No
GetProductFamily	Inventory	AvailableToPromise	05:43:29 PM PDT, 09/04/03	05:43:29 PM PDT, 09/04/03	No
GetZipCode	Shipping	AvailableToPromise	05:45:51 PM PDT, 09/04/03	05:46:01 PM PDT, 09/04/03	No
ValidateCurrency	Currency	AvailableToPromise	05:57:13 PM PDT, 09/04/03	05:57:13 PM PDT, 09/04/03	No
GetProductDescription	Inventory	AvailableToPromise	05:42:55 PM PDT, 09/04/03	05:42:55 PM PDT, 09/04/03	No
GetProductDescription	Inventory	AvailableToPromise	05:46:30 PM PDT, 09/04/03	05:46:30 PM PDT, 09/04/03	No
GetColor	Console...	Standard	05:51:26 PM PDT, 09/04/03	05:51:51 PM PDT, 09/04/03	No
ValidateCurrency	Currency	AvailableToPromise	05:57:13 PM PDT, 09/04/03	05:57:13 PM PDT, 09/04/03	No

19 cached items found

When the 'Purge from Cache' right-click menu item is selected, the *PurgeServiceFromCache* service is called to purge the selected service from the cache

Figure 11: NextAxiom System Architecture



NextAxiom Technology, Inc.